

“The Plant Materials Program and its cooperators have contributed the bulk of the material and technology now used in ecosystem restoration and are our foundation for meeting conservation challenges of the future.”

-- D.T. Booth and T.A. Jones, *Native Plants Journal*

## Threatened and Endangered Species

Decline in plant populations is due to many complex issues, including urban expansion, small acreage habitat degradation, and indirect or direct destruction of plant species by humans.

Destruction occurs through introduction of invasive species, over harvesting, and conversion of habitat to other uses.

The Endangered Species Act of 1973 was enacted to provide a means to conserve the ecosystems upon which threatened and endangered (T&E) species depend and provides a program for the conservation and recovery of these species. The Act directs all federal agencies to employ their authorities in furthering the purposes of the Act and to ensure that their actions do not jeopardize listed species or adversely modify their critical habitat.

“Threatened” is defined as any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its habitat range. “Endangered” is any species which is in danger of extinction within the foreseeable future throughout all or a significant portion of its range.



Ohai is a prostrate shrub to a small tree that produces amazing large red pea-like flowers.

The U.S. Fish and Wildlife Service (USFWS) establishes listings of plants and animals that require protection by the federal government. State and federal listings of T&E plant species are available on the NRCS PLANTS Database (<http://plants.usda.gov>).

### Technology Development

Hawaii has more plant species listed as threatened and endangered than any other state. Most of Hawaii’s endangered species have been adversely affected by invasive plants and animals. The Hoolehua Plant Materials Center (PMC) is finding ways to propagate certain T&E species such as ohai (*Sesbania tomentosa*). Ohai occurs on all the



Mao hau hele in flower

main islands except Lanai and Niihau. It was last seen on Lanai in the mid-1950s. An introduced species of deer is probably responsible for its loss. Mao hau hele (*Hibiscus brackenridgei*) is the state flower of Hawaii and is also endangered with only 60 known plants growing in just seven areas of the islands.

California has the second largest number of plants listed as threatened and endangered. Land conversion has been identified as the main cause. The Lockeford PMC has a proposed project to aid the recovery and eventual de-listing of several endangered plant species in California.

The project, in cooperation with the Agricultural Research Service and the USFWS, will collect endangered plants throughout California, propagate them, develop a foundation seed source, study methods of re-establishment, and release plants for commercial propagation and eventual use in revegetation projects.



Baker’s larkspur (*Delphinium bakeri*) is one of California’s endangered plants that will be included in the Lockeford PMC project.

Efforts to restore populations of T&E species are often hindered by a limited knowledge of their propagation.

The Manhattan PMC in Kansas is reintroducing Mead's milkweed (*Asclepias meadii*) into the tallgrass prairie communities where it is a component of the native landscape. In cooperation with the Kansas Biological Survey, the Manhattan PMC is conducting a propagation study on Mead's milkweed.



Mead's milkweed is a perennial herb that is found predominately in virgin tallgrass prairie.

The Cape May PMC in New Jersey has provided technical assistance to the USFWS and the U.S. Army Corps of Engineers in developing technologies to expand seabeach amaranth (*Amaranthus pumilus*), which is listed federally as threatened and by the State of New Jersey as endangered.



Seabeach Amaranth is one of New Jersey's threatened plants.

The Plant Materials Program also works with critical habitat for animal species. The habitat for sage grouse has been threatened by conversion to urban land and changes in grazing and vegetation management strategies. Plant Materials Specialists, working with biologists, have provided a list of diverse plants, including native forbs, grasses, and shrubs and the plant technology to manage them, to land managers and wildlife specialists.

### Ultimate Goal

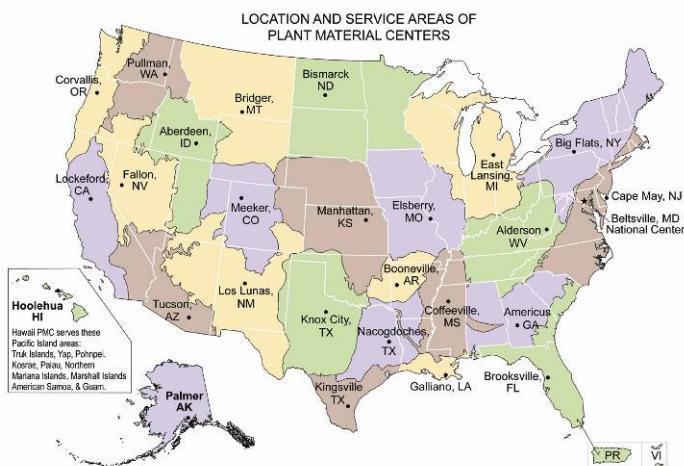
Our goal is to work cooperatively to avert species extinction worldwide. Concerns are loss of a species as a biological entity, imbalance of an ecosystem, endangerment of other species, and loss of irreplaceable genetic material. The Plant Materials Program works with land managers and land users to conserve these natural resources.

### About Us

The USDA NRCS Plant Materials Program consists of a network of 27 Plant Materials Centers (PMCs) and Plant Materials Specialists located throughout the United States. For over 70 years, PMCs and Specialists have provided essential and effective plant solutions for critical habitats, environmental concerns, management practices, and key farm and ranch programs.

For more information, visit:  
<http://Plant-Materials.nrcs.usda.gov>  
<http://www.nrcs.usda.gov>

Helping People Help the Land...



The USDA is an equal opportunity provider and employer.